CONFIDENTIAL

[redacted] 25X1

24th October, 1959.

[redacted] 25X1

BALLOONS [redacted] 25X1

[redacted] thanks you for the most prompt response 25X1
(your 802 of 15th October) to their enquiries.

Unfortunately neither of the two types of reflective balloon in it will exactly meet our requirement. We have outlined this in an accompanying note and should be grateful if you could discuss this with [redacted] and place an order with them 25X1
for the balloons and targets mentioned: i.e. one 24" diameter spherical radar target balloon complete with lifter balloon, and one 44½" diameter spherical radar target balloon complete with lifter balloon.

We hope that they will find this sufficient data on which to start work, but if they have any other queries, we will be pleased to answer these by telegram or they can be dealt with by [redacted] during his forthcoming visit. 25X1

[redacted] 25X1

[redacted] 25X1



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The experiment is divided into two stages and the requirement for the first is to fly a spherical radar reflector of 24" diameter at a constant height of 50,000 feet for a period of not less than ten hours. The rate of climb should be of the order of 1,000 feet per minute, but must not exceed one hour for the total ascent from ground level to 50,000 feet. The second stage of the experiment will consist of a repetition of the first stage with a spherical reflector of $44\frac{1}{2}$" diameter.

2. It would seem that neither stage of this experiment can be achieved with a singly reflectorized MYLAR Balloon because 25X1

a) If this is attempted with a valved balloon as described in [redacted] letter of 8th October, 1959, the leakage through the valve seems likely to preclude the flight duration we require; and

b) If the spherical reflectorized balloon was sealed as a super-pressure balloon it would have inadequate lift to give the rate of climb we require.

3. For the above reasons it appears that it will be necessary to use a lifter balloon. We, therefore, propose lifting a valved spherical metallised MYLAR reflector with a non-coated MYLAR super-pressure balloon of the cylindrical or pillow type described in a recent [redacted] report. We would 25X1
accept the advice of the [redacted] on the gauge of MYLAR to be used fo25X1
each type of balloon. It would be possible to fill the reflector balloons with gas, but we do not see any great advantage in this and imagine that it will be probably simpler to inflate them with air.

4. The volumes of the lifter balloons should be calculated on the basis of the use of hydrogen as the lifting gas.

5. We should point out, perha ps, that for the purpose of this experiment, the radar reflector must be spherical and a multipule corner type of reflector would not be acceptable.